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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/060,313	04/15/1998	MARCIA C. LINEBARGER	TN-104	9463

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ROCCO L. ADORNATO
UNISYS CORPORATION
UNISYS WAY, MS/E8-114
BLUE BELL, PA   19424-0001

EXAMINER
ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 08/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>01 July 2002</u> .

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-33* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
           application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)		4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .	
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) ☐ Notice of Informal Patent Application (PTO-152)	
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .		6) ☐ Other: .	

DETAILED ACTION

Claim Objections

1.   Claims 21 are objected to because of the following informalities: as written claim 21 does

not indicate that the method for conducting speech therapy is a computer implemented method

(as the specification teaches). Applicant is requested to amend the claim to correspond to the

teachings of the specification.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-8, 10-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wen

(US Patent No. 5,562,453) in view of Nojima (JP 409122106A) and Takebayashi et al. (US

Patent No. 5,357,596).

4.   Regarding claims **1, 2-5, 12-16, and 21-33**

        "visual display device..." is taught by Wen at Figure 1, element 5 and col. 3, lines 8-48;

        "microphone..." is taught by Wen at Figure 1, element 2 and col. 3, lines 8-48;

        "speaker..." is taught by Wen at Figure 1, element 6 and col. 3, lines 8-48;

"processor..." is taught by Wen at col. 3, lines 8-48 as one of the standard computational

functional units of a computer to perform functions of input, output, computation, control and

memory;

"displaying a picture", (see column 4, lines 6-7 where Wen discloses that the system

prompt displays a picture of the item selected category);

"generating a speech prompt", (see column 4, lines 5-6 where Wen discloses that the

system provides the user with a "first vocal prompt");

"inputting a speech response", (see column 3, lines 10-11 where Wen discloses that the

input to the system is via microphone);

5.   At col. 4, lines 55-57, Wen teaches a scenario in which the user is prompted with the

question "What color is this flower" and the user may respond with "That lower is white".

However, Wen does not specifically teach user identification of a plurality of aspects or

prompting for a sentence description of the aspects.

In a similar field of endeavor, Nojima (EP101322 A1 English Equivalent Document of JP

409122106A) discloses presenting a cartoon (a plurality of pictures or aspects) to a user (page 3,

lines 13-16), prompting the user to provide a description of the contents of the picture (page 5,

lines 33-63) wherein the description of the aspects is in a sentence structure and determining if

the user provided description accurately describes the picture (page 6, lines 24-51). Nojima

teaches that the invention is applicable in judging the health of recognition and understanding of

a subject (page 2, section entitled "Technical Field").

Therefore, it would have been obvious to one of ordinary skill at the time of invention to

modify the system of Wen to implement displaying of a plurality of pictures or aspects,

prompting a user to provide a description of the displayed plurality of aspects in a sentence

structure, and determining if the user provided description accurately describes the aspects as

taught by Nojima, for the purpose of judging the health of recognition and understanding of a

subject, as suggested by Nojima.

6.   Wen does not specifically teach performing speech recognition on the input speech

responses or performing natural language analysis. However, both speech recognition and

natural language analysis are well known in the art of speech signal processing.

        In a similar field of endeavor, Takebayashi et al teach a speech dialogue system for

improving human-computer interaction, which implements a speech understanding unit that is

capable of recognizing words or sentences in an input speech, as well as extracting a semantic

content intended to be expressed in the input speech (refer to col. 8, lines 3-68 continuing to col.

16, lines 1-17). Takebayashi teach that the speech dialogue system is capable of realizing natural

and smooth dialogue between the system and a human user (abstract).

        Therefore, to the extent that Wen does not teach performing speech recognition and

performing natural language analysis, it would have been obvious to one of ordinary skill at the

time of invention to modify the biofeedback training system of Wen to implement a speech

understanding and dialogue management system which performs speech recognition and natural

language analysis as taught by Takebayashi et al, for the purpose of realizing natural and smooth

dialogue between the system and human user, as suggested by Takebayashi et al.

7.   Wen does not specifically teach performing natural language analysis to analyze the

semantic content of the input sentence to determine appropriate sentence correctness. However,

determining the semantic content of recognized input speech is well known in the art.

Takebayashi et al teach a speech dialogue system for improving human-computer

interaction, which implements a speech understanding unit that is capable of recognizing words

or sentences in an input speech, as well as extracting a semantic content intended to be expressed

in the input speech (refer to col. 8, lines 3-68 continuing to col. 16, lines 1-17). Takebayashi

teach that the speech dialogue system is capable of realizing natural and smooth dialogue

between the system and a human user (abstract).

Therefore, it would have been obvious to one of ordinary skill at the time of invention to

modify the biofeedback training system of Wen to implement a speech understanding and

dialogue management system which specifically extracts or determines the semantic content of a

recognized speech input as taught by Takebayashi et al, for the purpose of realizing natural and

smooth dialogue between the system and human user, as suggested by Takebayashi et al.

8.   At col. 3, lines 40-49, Wen discloses the system provides feedback to the user indicating

the user's performance on a task. Wen does not specifically teach that the feedback is in

response to correctness of the semantic content of an input sentence. However, Nojima discloses

determining if the user provided description accurately describes the picture (page 6, lines 24-51)

and Takebayashi discloses extracting semantic content of a speech recognized input (refer to col.

8, lines 3-68 continuing to col. 16, lines 1-17).

Therefore, it would have been obvious to one of ordinary skill at the time of the invention

to modify the biofeedback system of Wen to implement determining if the user provided

description accurately describes the aspects as taught by Nojima, for the purpose of judging the

health of recognition and understanding of a subject, wherein the input description is analyzed to

extract semantic content, as taught by Takebayashi et al, and to further implement providing

feedback to the user based on the user's performance of the task, thereby providing to the user an indication of their health of recognition and understanding.

9.   Wen does not specifically disclose a method of conducting speech therapy. Wen discloses operational examples for using the system, which teaches how one would implement the system in a speech-training environment. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system disclosed by Wen and apply the operational examples as taught by Wen to develop a computerized method for conducting speech therapy. Wen teaches that such a use of her system would be a tremendous advantage for a user when a person is not available to assist in training.

10.   Regarding claims 6-8 and 17-19, "...altering a visual characteristic..." is taught by Wen at col. 4, lines 55-62.

11.   Regarding claims 10, 11, and 20, "speech prompt...activated by an icon..." is taught by Wen at col. 4, lines 63-68 continuing to col. 5, lines 1-3.

12.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wen in view of Nojima and Takebayashi et al. as applied to claim 1 above, and further in view of Shpiro et al. (US Patent No. 5,487,671).

13.   Regarding claim 9, Wen, Nojima, and Takebayashi teach everything as claimed in claim 1. However, neither Wen, Nojima, nor Takebayashi teach replaying a speech response. However, refer to Shpiro et al. who disclose a computerized system for teaching speech in which the system replays the user's response to a testing sequence (Figure 5B, step 520).

Therefore, to the extent that Wen, Nojima and Takebayashi et al. do not replay a user's response, it would have been obvious to one of ordinary skill at the time of invention to modify the training system of Wen to implement the speech understanding system of Takebayashi et al. and to further modify the system to replay the user's response to testing sequences as taught by Shpiro et al., because such a modification would provide a means for the user to know that the system is capturing and analyzing their intended response.

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kanevsky et al (US Patent No. 5,897,616) teach a speaker verification system which implements speech recognition and semantic analysis to determine correct responses to questions for providing or denying access to services.

Rothenberg (US Patent No 6,134,529) disclose a speech recognition apparatus and method for learning in which the recognition program can reliably recognize and understand large word and phrase vocabularies, and makes determinations of correct or incorrect responses.

Suda et al (US Patent No. 5,802,504) discloses a text preparing system, which implements a feedback processor for use with natural language processing and semantic analysis.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258.

The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone numbers

for the organization where this application or proceeding is assigned are 703-872-9314 for

regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-306-0377.

AAA
August 8, 2002

TALIVALDIS IVARS SMITS
PRIMARY EXAMINER